

SOUTH DELTA WATER AGENCY
4255 PACIFIC AVENUE, SUITE 2
STOCKTON, CALIFORNIA 95207
TELEPHONE (209) 956-0150
FAX (209) 956-0154

Directors: E-MAIL Jherlaw@aol.com
Jerry Robinson, Chairman Engineer:
Robert K. Ferguson, Vice-Chairman Alex Hildebrand
Natalino Bacchetti, Secretary Counsel &
Manager:
Jack Alvarez John Herrick
Mary Hildebrand

February 7, 2006

Via e-mail

Mr. Paul Marshall
Department of Water Resources

Re: Comments to DEIS/R for the South Delta Improvements Program

Dear Mr. Marshall:

In making these comments, the South Delta Water Agency ("SDWA") notes that it is involved in ongoing discussions and negotiations with DWR regarding the project. It is the intent of the parties through those discussions to resolve all of the issues which are of concern to SDWA. At this time, it is anticipated that the resolution would be some sort of outside agreement similar in form to that which was originally proposed as a settlement to the lawsuit referenced below. In light of this, SDWA looks forward to reaching agreement with DWR and USBR so that it may fully support the barrier portion of SDIP.

One portion of the SDIP deals with the tidal barriers. The genesis of the barrier project was a 1982 lawsuit filed by SDWA against both DWR and the USBR. That suit alleged adverse impacts arising out of the operation of the SWP and CVP to the detriment of southern Delta water users. The suit was eventually stayed so the parties could follow through on settlement negotiations. Those negotiations were at first productive and resulted in the idea that exports could continue if tidal barriers were installed and operated in the south Delta to address water level and quality impacts. Another portion of the negotiations dealt with addressing the effects of the CVP on San Joaquin River flows and anticipated the commitment of additional flows down the River. This latter portion of the negotiations was terminated by the USBR, which in turn prevented any final settlement from being formalized.

From the beginning, SDWA has tried to have a comprehensive resolution of the issues in order that the alleged effects of the projects are cured or mitigated. At this time, the SDIP preferred alternative addresses many but not all of the issues. Hence, SDWA believes a resolution will require not only necessary changes to the SDIP, but also, outside additional commitments by DWR and the USBR.

The other portion of SDIP deals with increasing SWP export rates up to 8500 cfs. Per the DEIS/R, DWR and USBR are waiving any statute of limitations for a CEQA or other challenges to the portions of this document which relate to 8500 until sometime after the decision on selecting a preferred alternative for the 8500 is accomplished through additional or supplemental

environmental review. Based on that assurance, SDWA will make no comments at this time on 8500 or transfers done thereunder, and the possible effects of those actions.

The following comments are divided into two areas. The first, which includes Nos. 1 through 11 are general comments on the efficiency and performance of the proposed barrier program. Although general, these comments do deal with the specifics of water quality, quantity, and depths associated with proposed barrier operations. The second group of comments are more narrowly focused on statements, facts, or assumptions in the DEIS/R which SDWA seeks to correct or comment on.

General Comments

1. Project Purpose. The SDIP project purpose is to “maintain adequate water levels, and through improved circulation, water quality available for agricultural diversions in the South Delta.” The water level, flow and quality problems experienced in the South Delta are the result of the operation of the SWP and CVP. Although the exact extent of those impacts may be the subject to discussions, the effects themselves and the magnitude thereof is not. Attached hereto is a 1980 Report on the effects of the projects on South Delta water levels, inflow, circulation, quality and quantity. The SDIP project purpose should be to fully mitigate the adverse impacts to the area caused by the projects. In addition, as this project is a key portion of CALFED’s attempts to “fix the Delta,” to improve water quality for all users, and to not redirect adverse impact to other parties, the project purpose should also be to meet all existing water quality standards and to satisfy the needs of all beneficial uses in the area pursuant to the Delta Protection Act and watershed protection statutes. As written, the project purpose allows for water levels and quality to be maintained at what DWR and USBR deem adequate, rather than what the local diverters believe is adequate or what is required by statute or permit conditions.

2. Salinity Goals. Actual operations of the barriers, Clifton Court Forebay, the CVP Tracy Pumping Plant, and numerous upstream actions taken by or at the behest of the projects, will affect the water quality in the southern Delta channels. The system should be operated to maximize water quality in the channels in line with CALFED’s goal of continual improvements in water quality. Such efforts will not only be beneficial to local diversions, but will improve export quality also to the benefit of municipal and agriculture export users. Hence, regardless of the existing water quality standards, the system should be operated to better those standards when reasonable.

3. Barriers Used as Needed. Current language in the DEIR/S suggests that use of the barriers in summer will be allowed most of the time and that use during other times will be contingent on other factors, and may not be allowed. There must be assurance that the barriers and other facilities will be operated when and as needed to protect the in-channel water supply and quality. This protection must not be subject to being overridden to satisfy other interests. Fishery concerns may create a tension with barrier operations, but both are mitigation for project operations and one should not trump the other. If the projects cannot protect fisheries and local diversions, then exports must decrease to the point where such complete protection is provided.

4. Water Levels. The draft SDIP plans to do specified dredging and then operate barriers so that the water level at any point in the channels downstream of the HOR will not fall below 0.0 ft msl, and will have adequate depth at that level for continuous operation of local diversion facilities. This level is lower than that maintained with temporary barriers. The barriers are proposed to be operated so that there is a net unidirectional reverse flow from the Middle River barrier up to Old River; a net unidirectional reverse flow from the Old River barrier near Tracy up and through the connecting channels to Grant Line Canal; and a net unidirectional flow in Grant Line Canal over the Grant Line barrier/weir. Alternatively the flows in Old River and

Grant Line can be switched so that the upstream flow is in Grant Line and the downstream flow is in Old River.

DWR modeling indicates that this lower level is satisfactory. However, there is no margin of error. If the modeling is off for any reason, operations may not be flexible enough to correct the problem while still maintaining water quality. [This is due to the tension between the two goals; raising the barriers to help levels will decrease net flows and adversely affect quality.] The program should insure that water levels are kept at heights that actually do allow for local diversions to continue as needed and without impairment.

DWR and USBR should commit to keeping water levels at heights “which will allow for local diversions to continue as needed and without impairment.” If proposed operations do not provide such protection, DWR and USBR must commit to supplementing the tidal inflow so that adequate depth can be maintained while still providing circulation for quality concerns. This supplemental flow will most likely involve the use of low-lift pumps at one or more of the tidal barriers. This contingency option should be included in the final EIR/S. The only other option is to increase San Joaquin River flow such that the net flow is downstream in all South Delta channels. This option appears to be more difficult to implement.

5. Net Flows/Maintaining Water Quality. DWR modeling (attached) done at the behest of SDWA indicates that under certain conditions, during the two neap tide cycles of each month and with average local diversions, net flow upstream in Middle River and Old River will slow sometimes to 50 cfs or less. Both DWR and SDWA believe such a low flow will be insufficient to adequately flush the salts and other constituents. During these times, it is likely that water quality on Old River, and perhaps also on Middle River will exceed the standard. This is of special concern in Old River which receives both a higher amount of poor San Joaquin River water and the effluent discharges of the City of Tracy. During times of peak local diversions, the modeling indicates that the flows in the upstream areas of Old River and Middle River will rarely be in the upstream direction (which is necessary for the maintenance of water quality). At those peak times, the flows will be back downstream creating a null zone in each channel where salts and other constituents will accumulate and concentrate. At those times, water quality in the channel cannot be expected to be in compliance with water quality standards. Even when the flow under these conditions is back upstream, it is far less than what is necessary to have any meaningful flushing of the channel.

This lack of salinity control can occur twice each month over a four to seven day period at a minimum, and at most (under peak depletion times) during the entire month. Although DWR modeling of these conditions uses July of 1995 as the worst case scenario, this does not mean these conditions can be assumed to be rare. It is likely that they will occur in many summer or fall months. Even if these conditions were not frequent, they should still constitute a significant impact that must be avoided or mitigated. Local diversion needs and the requirement for good water quality (at or below the standard) are necessary for the production of crops. Evidence on the impacts to crops production are also included herewith. Local agricultural diverters should not subject to protection at some times and not at others.

DWR modelers have proposed that to address this situation when net flows are insufficient or lacking, the Old River barrier be used as a weir instead of the Grant Line Canal barrier. DWR partial tracking indicates that with such a change (under monthly average diversions, not with peak diversions) the constituents of Old River water will be flushed out downstream over a three to five day period. This does provide a flushing, but it is unknown if that will be enough. That channel is expected to get even more municipal discharges in the near future, and already experiences low DO levels and elevated salinities.

Given the lack of margin of error in water level portion of the program, it is not certain that switching the flow patterns will solve the quality problem when it occurs. Therefore, just as the water level concerns require supplementing the incoming tidal flows, so too must this option

be considered for the water quality aspect of the project. It appears that a commitment to the low-lift pumps is necessary to make the program provide the necessary protections.

The program must also insure that there is a net export or flushing of incoming salts out of the area. Even if flows at some times are sufficient to meet water quality standards, there can still be an accumulation of salts on the lands and in the groundwater of the area, to the detriment of local beneficial uses. Flows must transport all of the incoming salts out of the area.

The water quality analysis and modeling supporting the program should be updated. Currently the model used incorporates an assumed salinity concentration for local discharges. However, this assumption derives from a survey that lumps portions of the Central Delta with the South Delta to arrive at an average discharge salinity. Central Delta discharges from the area included in the survey have salinities well below those in the South Delta and consequently, the assumption causes results which understate the salinity of the return flows. This in turn results in an understatement of the water quality in the channels and the effects of the SDIP barriers. Hence, it is unknown at this time if the impacts to water quality resulting from the project are adequately represented and thus an analysis of significant impacts undeterminable.

6. Tom Paine Slough A question exists as to whether or not Tom Paine Slough will fill under the manipulated tidal conditions of the SDIP. In recent years (at least 2002, 2003, 2004), the Slough has experienced significant problems of insufficient water levels. A number of causes have been proposed, but the effects of export pumping on the ability of the channel to get water into the Slough is at least a part of the underlying causes. Prior investigations by SDWA and USBR in their 1980 Report indicate that channel resistance in the area greatly increases and therefore the normal degradation of the channel bottoms may have exacerbated the "normal" problem of filling the slough such that it cannot now fill during the time available. The SDIP and related exports decrease the duration and peak of the incoming tides. At this time, DWR modeling indicates that SDIP will not make it any easier to fill the Slough and may likely make it more difficult. The program should include measures to insure that the Slough will fill as needed.

7. San Joaquin River. The SDIP proposes to address the channels west of the HOR and not the mainstem. As stated above SDWA believes it should not separate out two portions of the same problem; the adverse effects of the SWP and CVP on water levels, quality and flows in the South Delta.

The SDIP assumes that under monthly average depletion conditions, minimum flows of 700 - 800+ cfs will be present at Vernalis to supply the necessary 500 cfs into HOR while still providing depletion needs and downstream flow towards Stockton. [SDIP assumes operation of the HOR such that 500 cfs flows into Old River when mainstem flows are 700 - 2,200. Above 2,200, the barrier is proposed to be fully open. Below 700 the barrier is also fully opened.] The 700 - 800+ cfs amount is based upon 150 - 200 cfs of diversions from Vernalis to HOR plus the 500 cfs regulated into Old River with the remaining flow, if any, providing net downstream flow towards Brandt Bridge. When peak diversions are modeled, the 500 flow into HOR must be raised to 700 cfs during the neap tide periods in order to maintain water levels west of the HOR barrier (this additional inflow has no effect on the lack of net flow/water quality problem identified above, it is necessary to keep water levels behind the tidal barriers above the 0.0 msl). In such an event, the minimum Vernalis flow to provide these needs is somewhere near 1,000 cfs in order to maintain some sort of net downstream flow to Brandt Bridge.

Current modeling of the San Joaquin River predicts that these summer flows may decrease to approx 600 cfs.

When the flows drop below approx 1,000 cfs at Vernalis, many local diversions on the mainstem are unable to draw water out of the river due to low levels. If the flows drop below 700 - 800+ cfs, the SDIP still requires 500 - 700 flow through the HOR. Given the depletions upstream on the mainstem, that required flow will result in reverse flows in the Brandt Bridge

area towards HOR. This circumstance is not expressly analyzed in the DEIS/R, but was done by DWR in its communications with SDWA. The modeling shows that if flows on the mainstem decrease to 600 cfs at Vernalis, the San Joaquin will reverse its net flow from north to south. This reverse flow is not expected to be abrupt and substantial, and will therefore result in the creation of a large null zone where quality will worsen. In that circumstance, the SDIP will also be lowering the levels in the mainstem and exacerbating the diversion problem. SDWA asserts that pre-project, the tidal waters reached all the way to Vernalis, and that the tidal effect helped provide the necessary water height notwithstanding low River flows. Hence, under those conditions the diverters would have had sufficient depth for their pumps, and therefore the SDIP should insure they can continue such diversions.

DWR and USBR must commit to providing a minimum flow on the River through recirculation, exchanges, or other means. They should also commit to meeting the water quality standard at Brandt Bridge with downstream flows and not allow reverse flows on the mainstem to occur. Such downstream flows will provide help in maintaining the DO levels at the Stockton Deep Water Ship Channel. In addition, DWR may want to explore dredging and intake alterations along the mainstem to minimize the extra flows needed.

8. Barrier Effects of Flood Flows. It appears that SDIP modeling for flood flow effects in the DEIR/S is insufficient. The analysis appears to have compared the HOR channel cross-section as it is now with the cross-section after dredging for the barrier but without the barrier in place. Thus the modeling gives no meaningful data on flood flow effects. Other barriers were not examined, but were assumed to have no effect on flood flows. This deficiency in modeling must be corrected in the final EIR/S. DWR and USBR must consult with local Reclamation Districts and their engineers to fully analyze the flood flow effects of the barriers. The barriers need to be flood neutral as are all other in-water works in the Delta.

9. Maintenance Dredging. In order to maintain the efficiency of the barriers, maintenance dredging is required to insure barrier operations continue as planned. Since the barriers are mitigation for the adverse effects of the SWP and CVP on local beneficial uses, it should be the obligation of the projects to make sure the barriers continue to work. That obligation should include maintenance dredging.

10. Downstream Diversions. The barrier program will adversely affect water levels downstream of the structures. The SDIP includes necessary changes to diversion intakes and dredging as necessary. It appears that Victoria Island is also experiencing this problem and will need to be added to the project, especially if 8500 is approved.

11. Other. Both the 1995 Water Quality Control Plan for the Bay-Delta and D-1641 recognized that the previous salinity monitoring locations will no longer be representative of conditions throughout the channels once barrier operation create altered flow patterns. New monitoring points must therefore be representative of salinity throughout the channels during each mode of operation.

Specific Comments

-- It is unclear as to what the net flows will be in channels such as Old River during VAMP flow periods. At those times, the project proposes closure of head of Old River. Even with the expected low exports during that time, there does not appear to be a mechanism for creating a net flow in the various channels. Although these are normally times of good quality, during low flow years the existing problems in Old River may be exacerbated rather than improved.

-- On page 1-5, the document lists numerous effects on water quality and levels in the South Delta. Although there are certainly numerous things which affect such quality and levels, the document should not suggest that export levels are merely one of many. The

conditions other than exports did not historically appreciably affect local diversions. However, when exports began and CVP service area discharges entered the river, numerous adverse effects to the South Delta arose.

- On page 1-19, the document references a CALFED goal to balance beneficial uses as well as the needs of the environment. To the extent such a balancing is contrary to existing water right priorities including the priorities of the Delta Protection Act and area of origin statutes, such a balance would be illegal.

- Page 1-30 references a potential agreement to allow for the easy installation of low lift pumps to supplement tidal inflows. The project at a minimum should anticipate and allow for such installation. The operational scenarios examined by the document refer to an increase in State exports up to 8,500 cfs. Until the perceived problems with the SDIP are either resolved or otherwise corrected, there should be no increase in exports allowed.

- With regards to the various alternatives examined, it should be made clear that options which include only the HOR barrier or only the HOR barrier and the Old River and Tracy Old River barrier would not mitigate the effects of the export projects on the South Delta. Closing off the head of Old River for the protection of fish without some other agreed-to program could be deemed illegal as it would deprive various riparian, appropriative, and pre-1914 water right holders of water to which they are entitled.

- SDWA believes there should be no interim 8,500 operations until resolution of the herein-described issues is accomplished.

- The document states in one place that the barriers will be installed without any levee relocation. At another place, it states that the barriers will have no adverse effects on the passage of flood waters. Given the drawings and schematics of the barriers, it appears that each will have an abutment and other in-channel structures which will necessarily impact the passage of flood flows. The final document should include an examination and most likely adoption of levee relocations to address this issue.

- At page 2-26, the document describes how operation of the tidal barriers would vary over the course of the peak agricultural diversion season. This statement should be corrected to indicate that the barriers will always be operated as needed.

- Page 2-29 describes a gate operations review team which does not include SDWA. In addition to resolving the issues described herein through an agreement, any oversight team dealing with barrier operations must include a representative of SDWA.

- On page 2-33, the amount of dredging proposed is set forth. It would appear that substantially more dredging will be necessary in the Doughty Cut/Old River/Salmon Slough area. SDWA suggests the document be changed to include such additional dredging.

- It should be noted that the document and especially figure 4-1 therein show that the project results in lower peak tide levels under all alternatives and lower low tides during a substantial portion of the year during the preferred alternative. The benefits from such higher tides should not be understated.

- The document's treatment of water rights in Chapter 5 is incomplete. It suggests that South Delta diverters may not always be entitled to divert from the channels. To the contrary, given the area's elevation, there is always water in the channels, even during the worst droughts of record. During those times, all inflow into the Delta provided a supply for diverters which was maintained or supplemented by Bay waters. Only on one occasion did sea water intrude into the South Delta and that was in a September, allowing local diverters to adjust

accordingly. The issue of maintaining water quality has been settled by being placed in the permits of the DWR and USBR, besides other statutory and regulatory requirements. Hence, there are no times when South Delta diverters would be legally unable to divert from the channels.

-- The document makes the error of analyzing averages, whether it be flows, tides, depletion rates, or salinity. Averages mask maximum and minimum conditions and give the impression that there are no problems. This is inappropriate. For example, average water levels may be sufficient for local diversions, but those averages may include substantial times when levels are below the target level. During those times, diversions will be impaired and crops may be affected. When the higher levels occur it does not "undo" the harm that occurred when the levels were low. The document notes some of these extremes, but concludes that on average the extremes don't result in significant impacts.

– The document lists the priority of uses for the increased export rates, but these uses do not include recirculation of export water for release into the San Joaquin River. By excluding such a priority, DWR and USBR are ignoring D-1641's directive to examine recirculation as a means of addressing salinity loads/concentrations on the River, and HR 2828's directive to do the same.

– Page 5.2-17 states that Tom Paine Slough is isolated from tidal influences. This is only partially true. The siphons which fill the slough are influenced by the tides on the Old River side. Anecdotal observations indicated that the problems experienced on the slough in recent years was directly related to the tide levels in Old River.

– The analysis of impacts on tide levels in Chapter 5.2 requires clarification. The impacts stated are substantially different than those contained in the 1980 Report and an explanation would seem appropriate. In addition, some of the analysis includes SWP export rates at 10,300 cfs. Such an analysis should not be done unless one of the purposes of the document is to allow later tiering for 10,300. If that is the case, it should not be. Any decision on such a radical changes must stand alone and not be hidden in this document. At this time, DWR modelers and SDWA acknowledge that protection of water levels and quality in the South Delta cannot be maintained when SWP exports are at 10,300.

– The operation of the tidal barriers on page 5.2-30 gives a false impression that the barriers can be manipulated to achieve higher water levels. As currently modeled, raising the level above the 0.0 msl goal will adversely affect circulation and quality.

– The data in Figures 5.2-28 et. seq. raises numerous questions. For example, how can water levels at Grant Line be lower than -1.0 with barrier operations which prevent such an occurrence? Similarly, under the circulation scenario, water levels sometimes drop below -1.0. Discussions with DWR modelers indicated that with the GLC barrier at 0.0, the water levels in the channels upstream would remain at or above 0.0. If water levels drop below this target, even for short periods of time, substantial impacts do occur to local diversions. [Loss of siphon or pump results in an interruption of irrigation needs. Re-establishing the supply results in over watering of a portion of the crop, and the delay can result in lack of water for the remainder of the crop. The later application of irrigation water does not "cure" the previous stress to the plant when water was unavailable.]

– The analysis of salinity effects should take into account that standards apply to all portions of the channels, not just at specific compliance locations.

– It is not clear how the changes in water quality which are greater than 10% (Table 5.3-3) are treated in the significance analysis. A ten percent changes was described as significant

in the text, but the results are not deemed significant. The project should result in full compliance with the 0.7/1.0 EC standards.

- The water quality and level impacts resulting from a substantial amount of transfers (see for example page 5.3-62) are generally unexamined and deferred. SDWA assumes that comments to this may be made at the time the preferred alternative for 8500 is determined.

- The modeling results for EC contained in Figures 5.3-46 et. seq. show exceedances above the standards. If those exceedances constitute a violation of the standards (are over thirty days) they are necessarily significant under CEQA. Even if they do not occur over the thirty day average time frame of the standard, they should be considered significant to the degree they impact crop production.

The SDWA looks forward to resolving its concerns with DWR and USBR.

Very truly yours,

JOHN HERRICK

Attachments

Various DWR flow and salinity model runs
1980 Report (send in two parts)
Cease and Desist Hearing Transcript November 21, 2005
Alex Hildebrand Testimony and Exhibits
Terry Prichard Testimony
Dr. Sean Snaith Testimony and Exhibits

John Herrick, Esq.
4255 Pacific Avenue, Suite 2
Stockton, CA 95207
(209) 956-0150 (Office)
(209) 956-0154 (Fax)